

Final Project Document

On how AI can solve some of the problems posed by Covid, AI@Covid Solutions.


Submitted By:

Team T855

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Overview

The COVID-19 pandemic is considered as the most crucial global health calamity of the century and the greatest challenge that humankind faced since the 2nd World War. In December 2019, a new infectious respiratory disease emerged in Wuhan, Hubei province, China and was named by the World Health Organization as COVID-19 (coronavirus disease 2019). A new class of coronavirus, known as SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) has been found to be responsible for occurrence of this disease. As far as the history of human civilization is concerned there are instances of severe outbreaks of diseases caused by a number of viruses. According to the report of the World Health Organization (WHO as of April 18 2020), the current outbreak of COVID-19, has affected over 2164111 people and killed more than 146,198 people in more than 200 countries throughout the world. Till now there is no report of any clinically approved antiviral drugs or vaccines that are effective against COVID-19. It has rapidly spread around the world, posing enormous health, economic, environmental and social challenges to the entire human population. The coronavirus outbreak is severely



disrupting the global economy. Almost all the nations are struggling to slow down the transmission of the disease by testing & treating patients, quarantining suspected persons through contact tracing, restricting large gatherings, maintaining complete or partial lock down etc. Dealing with the unforeseen challenges caused by the COVID-19 pandemic has taken a significant toll on people all across the world. As many as 213 countries and territories have registered COVID-19 cases, and the entire world is buzzing with uncertainty and questions: How long will the pandemic last? What will people's lives look like once the pandemic is over?

Many countries have declared restrictive measures, such as lockdown, shelter in place, or stay at home orders, to contain the pandemic at a local level. However, the wildly differing responses and response timelines have left people wondering if authorities failed to take the situation seriously early on when they could have done more to slow down the spread of the coronavirus. This document describes the impact of COVID-19 on society and global environment, and the possible ways in which the problems posed by covid-19 has also been discussed therein.

Goals

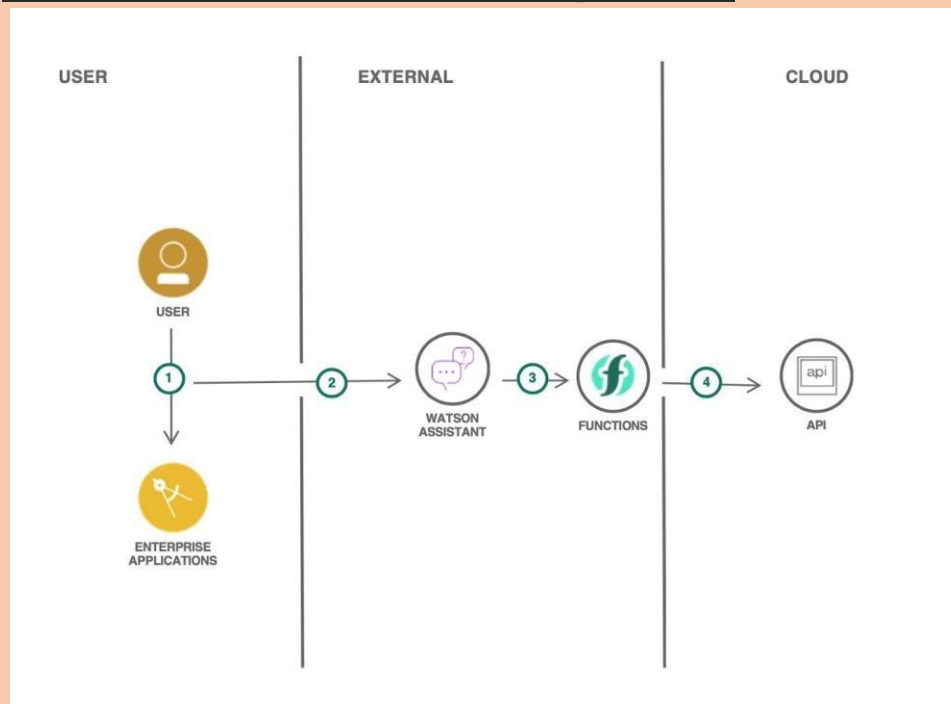
The COVID-19 pandemic has left its impact on every industry, especially on the global economy and financial sector. Bank helplines are receiving a lot of calls with general queries regarding loans, mortgages, bank charges, etc. which keeps the helpline and helpline agents occupied. Therefore, to reduce the workload and save time for customers and helpline agents we plan to create a COVID-19 Virtual Banking Assistant using technologies such as Watson Assistant for leveraging the chatbot and IBM

Cloud for connecting Web Application UI to Watson Assistant.

Technologies Used:

- IBM Watson Assistant — for leveraging the chatbot itself.
- IBM Cloud Functions — for connecting Web Application UI to Watson Assistant.
- Node Red - for generation and design of website
- Dialogue Skills – to train the chatbot to connect with the user

Architecture Diagram

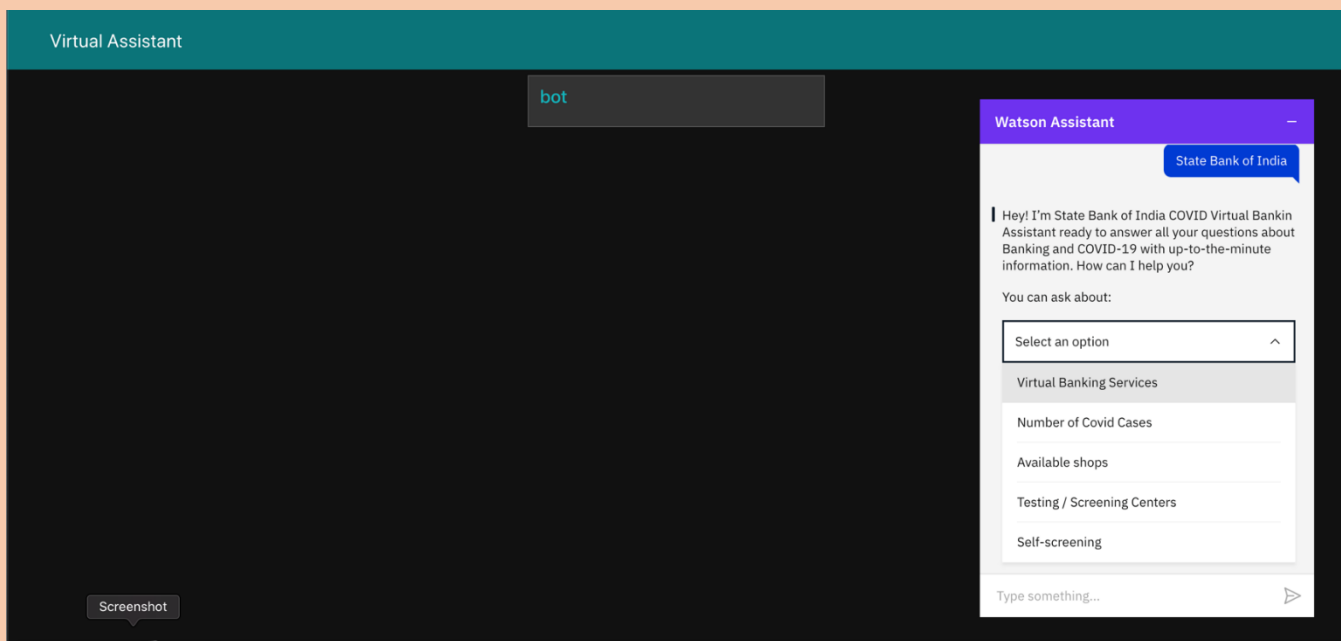
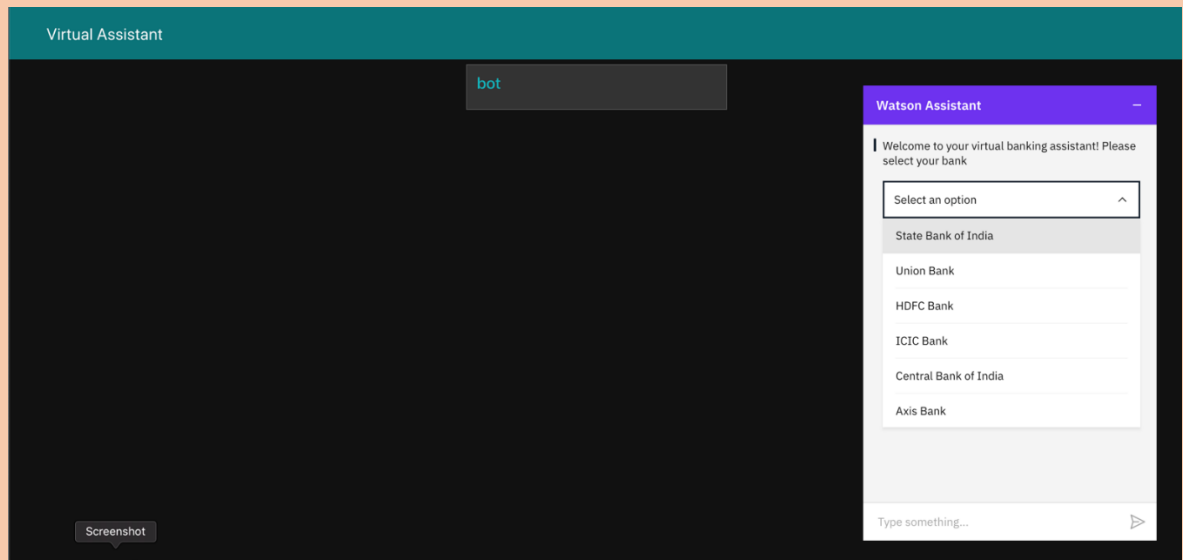


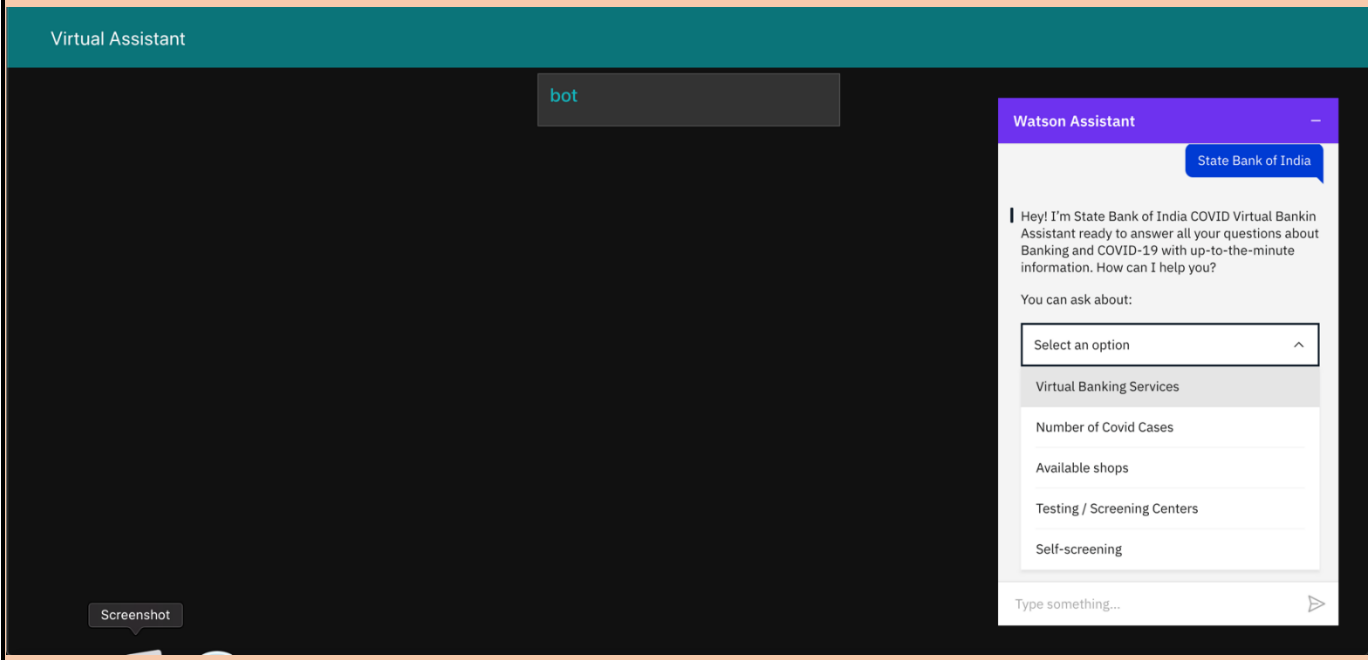
Users can interact with the assistant through the web or mobile application. The application calls Watson Assistant that is hosted on IBM Cloud. Watson Assistant makes calls to Cloud Functions to extract the latest information about COVID-19 cases. Cloud Functions makes calls to COVID-19 cases API from hospitals.

Resources

- [IBM Cloud](#)
- [Watson Assistant](#)
- [Node Red](#)

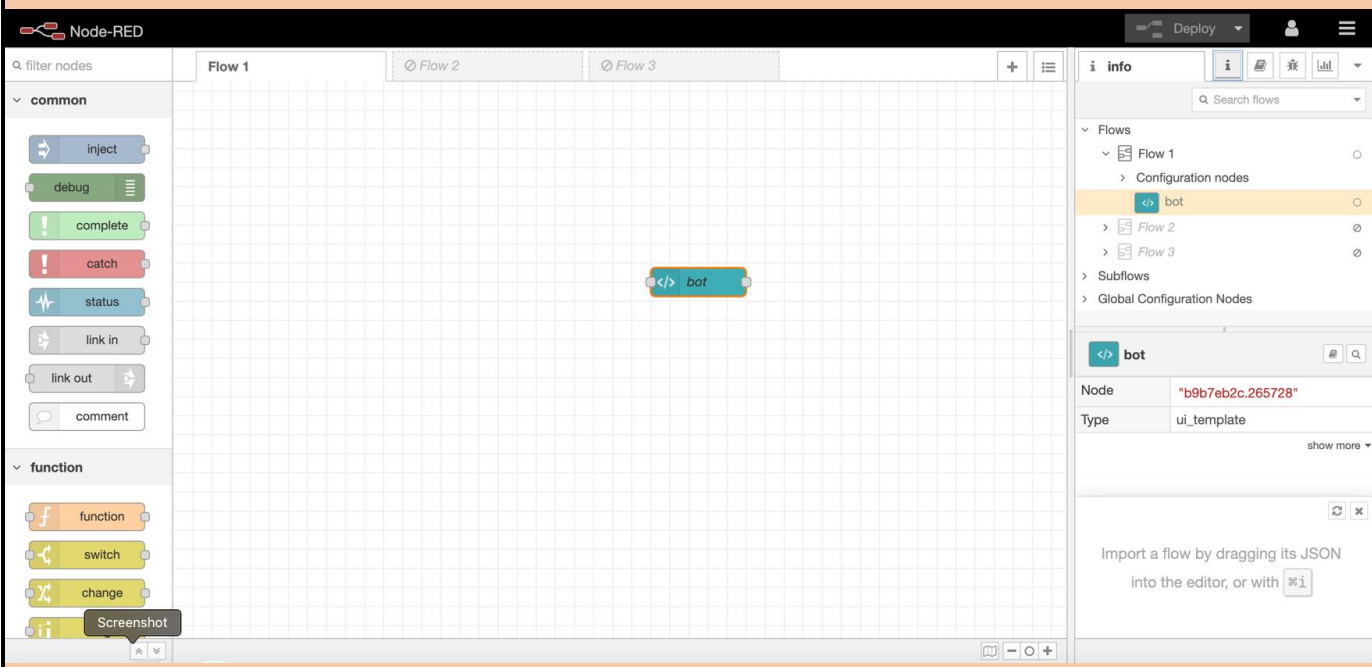
- Result:






Implementation


The working along with screenshots from our project are given below-



 IBM Cloud

Search resources and offerings...

Catalog Docs Support Manage cusat


 Resource list

Create resource +

Name	Group	Location	Offering	Status	Tags
Filter by name or IP address... Filter by group or org... Filter... Filter... Filter... Filter...					
Devices (0)					
VPC infrastructure (0)					
Clusters (0)					
Cloud Foundry apps (1)					
Node RED QOAJG 2020-10-28	chandnisuresh2000@gmail.com / dev	London	SDK for Node.js™	Started	
Cloud Foundry services (1)					
Services (3)					
Storage (0)					
Network (0)					
Cloud Foundry enterprise environments (0)					
Functions namespaces (0)					

Screenshot

FEEDBACK

 IBM Cloud

Search resources and offerings...

Catalog Docs Support Manage cusat

Resource list /

Node RED QOAJG 2020-10-28 Running Visit App URL Add tags

Details Actions...

Getting started

Overview

Runtime

Connections

Logs

API Management

Autoscaling

Instances

Health

100%

1/1 instance(s) are running

MB memory per instance

0 256 256

Instances

1

Runtime

SDK for Node.js™

256

Total MB allocation

0 MB still available

Used Free

Runtime cost

Current and estimated cost excludes connected services.

US\$ 0.00

US\$ 0.00

Current charges for billing period

Estimated total for billing period

Oct 1, 2020 - Oct 31, 2020

Connections (1)

node-red-qaajg-2020--cloudant-1603896390198-60696

Screenshot

FEEDBACK

IBM Watson Assistant Lite Upgrade

Assistants

Virtual Banking Assistant

Actions Beta

Design an engaging conversation

Follow a simple step-by-step workflow to create an AI-powered conversation that addresses your customer's issues and allows you to focus on the quality of your assistant's interactions. [Learn more](#)

Add an actions skill

Dialog

BankingCOVID

Chat bot that delivers important information about bank features & COVID-19 virus outbreak.

LANGUAGE: English (US)

TRAINED DATA: 80 Intents | 24 Entities | 368 Dialog nodes

VERSION: ---

DESCRIPTION: ---

VERSION CREATED: ---

LINKED ASSISTANTS (1): Virtual Banking Assistant

Search Plus

Screenshot

Turn any content into answers

Integrations

</>

Preview link

Web chat

Choose a channel to deploy your assistant.

Add integration

IBM Watson Assistant Lite Upgrade

Learning center

BankingCOVID

Save new version Try it

Intents

Entities

Dialog

Options

Analytics

Versions

Content Catalog

Add node

Add child node

Add folder

Banking Services

#all_banking_services

1 Responses / 1 Context Set / Return allowed

Bank7_Welcome

\$banknames=='State Bank of India'

0 Responses / 0 Context Set / Skip user input / Return allowed

Bank1_Welcome

\$banknames=='Union Bank'

0 Responses / 0 Context Set / Skip user input / Return allowed

Bank2_Welcome

\$banknames=='HDFC Bank'

0 Responses / 0 Context Set / Skip user input / Return allowed

Bank6_Welcome

\$banknames=='ICIC Bank'

0 Responses / 0 Context Set / Skip user input / Return allowed

Screenshot

IBM Watson Assistant Lite Upgrade Learning center ?

BankingCOVID Save new version Try it

Intents Entities Dialog Options Analytics Versions Content Catalog Screenshot

Get started faster by adding existing intents from the content catalog. These intents are trained on questions that customers commonly ask.

Category	Description	Intents	
Banking	Basic transactions for a banking use case.	13	Add to skill +
Bot Control	Functions that allow navigation within a conversation.	9	Add to skill +
Covid-19	Common questions about the Covid-19 virus.	23	Add to skill +
Customer Care	Understand and assist customers with information about themselves and your business.	18	Add to skill +
eCommerce	Payment, billing, and basic management tasks for orders.	14	Add to skill +
General	General conversation topics most users ask.	10	Add to skill +
Insurance	Issues related to insurance policies and claims.	12	Add to skill +
Mortgage	Common questions related to the mortgage industry	20	Add to skill +
Telco	Questions and issues related to a user's telephony service, device, and plan.	21	Add to skill +
Utilities	Help a user with utility emergencies and their utility service.	10	Add to skill +

IBM Watson Assistant Lite Upgrade Learning center ?

BankingCOVID Save new version Try it

Intents Entities Dialog Options Analytics Versions Content Catalog Screenshot

Intents (80) ↑ Description Modified ↑↓ Examples ↑↓ Create intent +

<input type="checkbox"/>	#all_banking_services	a day ago	13	
<input type="checkbox"/>	#all_loan	a day ago	28	
<input type="checkbox"/>	#all_medical_reasons	a day ago	5	
<input type="checkbox"/>	#all_redundant_reasons	a day ago	6	
<input type="checkbox"/>	#Banking_Activate_Card	Activate a card.	11 hours ago	21
<input type="checkbox"/>	#Banking_Cancel_Card	Cancel a card.	a day ago	22
<input type="checkbox"/>	#Banking_Fee_Inquiry	Inquire about fees associated with a card.	a day ago	20
<input type="checkbox"/>	#Banking_Replace_Card	Replace a card.	a day ago	20

Showing 1–80 of 80 intents 1 1 of 1 pages < >

GITHUB REPOSITORY LINK

<https://github.com/jmp1730/Bank-VirtualAssistant>

URL of our Project

https://node-red-qoajg-2020-10-28.eu-gb.mybluemix.net/ui/#!/0?socketid=YthdPx9_ii9-y-KEAAAX

Demo Video Link

<https://drive.google.com/file/d/1hW8WBz03bqAhZG9ptPANh7Vbv0ZZOC67/view?usp=sharing>

Conclusion

As a result of the COVID-19 crisis, we are likely to see a rise in online banking activity and a decline in trips to brick-and-mortar branches. The current pandemic has forced customers who once resisted online banking to adopt digital banking apps as their new default. The more these customers realize how convenient it is to bank digitally, the less likely they are to go back to physical branches. And as the importance of digital banking distribution channels increases in the aftermath of the COVID-19 crisis, we are likely to see significant acceleration of key digital trends so as to give customers and agents an easy online experience we have fabricated a next-gen COVID-19 Banking Virtual Assistant, with a detailed repository of both bank-specific and health-specific information resources, which can help safeguard them, their families and their money—both during the COVID-19 crisis and beyond.

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References:

<https://nodered.org/docs/>

<https://www.ibm.com/watson/how-to-build-a-chatbot>